after line 7, insert the following: --Figure 4 shows the pin connectors 12 and 14 on the modules as located in a cavity in the module housing wall, preferably a cylindrical cavity large enough to receive the tulip connectors 28 and 30 and permit them to engage the recessed pins 60 and 61 is employed. The purpose of recessing the pins on the modules is to permit the flat faces of the modules to contact the flat face of the backplane, thereby adding to the effective support of the modules.--;

A2

lines 18 and 19, change "conditions" to --connectors--;

line 21, after the period (.) insert --In order to isolate a single phase, a ground connection common to each of the phases may be required and may be supplied as a single common input to the node and a separate connection to the module which requires the ground.--

A3

Page 19, line 10, cancel "of";

line 10, after "made" insert --of--;

Page 20, line 6, change "pins" to --tulip connectors--;

line 7, change "pins" to --connectors--.

Page 21, line 3, before the period (.) insert --as seen in Figure 5--.

Page 36, lines 2 and 3, change "spring" to --springs--.

Page 41, line 24, cancel "236";

line 25, after "switch" insert --236--.

IN THE CLAIMS

Amend claim 1 as follows:

A4

1.(Amended) An electrical modular power node comprising:

a. a power bus backplane containing a plurality of bus bars at least some of which are connectable to at least one power source, each bus bar having a plurality of terminals at regular intervals along the bus bar, each terminal being in a standard position in a

pattern with terminals from the other bus bars and all terminal patterns being in a standard orientation on the backplane; and

b. a plurality of functional modules, each housing at least [one functional component and] circuitry having at least one connector for connection to at least one terminal on a bus bar [for connection to at least one load to provide output required by each load connectable to the power bus backplane] and including bounding faces conforming to bounding faces of adjacent modules when also connected to the backplane, said modules providing geometrical packages for enclosing and supporting functional components, circuitry and connectors for electrically connecting the functional component and circuitry to the appropriate terminals, the connectors facing the power bus backplane being positioned to connect with specific terminals within each pattern on the bus bars such that each pattern of terminals on the backplane will accept minimum dimension modules at each terminal position without interfering with other modules at other terminal positions.

C1

Add the following claim:

A5

35. The electrical modular power node of claim 1, in which the terminals are so rigidly supported on the backplane and the connectors so firmly supported on the module housings that when the connector and terminals are engaged they provide mechanical support for the module.

C1

NF Claim 2 and 4, line 1, change "1" to --35--.

Amend claims 5, 7, 8, 10, 11, 13 and 16 as follows:

5. (Amended) The electrical modular power node of claim 4 [having] wherein some modules [module positions where some terminalis on the bus bar] are not to be electrically connected to [a] given [functional module] bus bars and connectors are provided on the modules in proper position for such connection which resemble those providing electrical connection, but in those positions only function to provide additional mechanical support for the module.

A6

7. (Amended) The electrical modular power node of claim 5 in which the connectors on the functional modules are self-connecting to terminals on the backplane such that when a functional module is properly positioned and oriented relative to the backplane and pressed toward the backplane, the terminals and connectors self-engage providing mechanical support for the module and making electrical [contact] connection where intended.

A7

8. (Amended) The electrical modular power node of claim 4 in which at least some of the bus bars in the same relative positions [of] within the parallel sets of bus bars are electrically connected together.

10. (Amended) The electrical modular power node of claim 4 in which at least [some] one set of bus bars in the [same relative positions of the] parallel sets of

A8

bus bars are not electrically connected together and not connected to an external power source but at least one set of bus bars is connectable to an external power source.

11. (Amended) The electrical modular power node of claim 3 in which at each minimum size functional module position on the backplane there is a terminal for each bus bar in a standard pattern of configuration and orientation whereby connectors on modules in positions opposite selected terminals self-engage those terminals in the power bus backplane [module to self-engage] and contribute to support of the functional module and terminals which are not opposed by connectors are accommodated by the module configuration to permit interconnection of those terminals and connectors which are opposed to one another.

13. (Amended) The electrical modular power node of claim 3 in which those [positions] connectors opposite terminals which are not to be connected electrically [to] in the functional module are [opposed by connectors] not electrically connected in the module [providing] but provide mechanical support.

A9

16. (Amended) An electrical modular power node of claim 3 in which the backplane of the power module is marked to indicate proper positioning of functional modules of minimum size whereby functional modules placed in the positions indicated but spaced away from the backplane may be [moved] guided toward the

A10

indicated backplane positions for self-engaging connection of the connectors to the terminals.

Claim 25, lines 9 and 19, change "contacting" to --contact--.

Amend claims 26, 27, 28, 29, 30, 31, 32 and 33 as follows:

26.(Amended) A power bus backplane comprising:

a. at least two stacked bus conductors arranged generally parallel to one another with one over the other;

All

b. [rigid] rigidly supported terminal means connected to each of the bus conductors in a common pattern repeated on the backplane at regular intervals representing the minimum dimensions of the standard module and positioned [in the same repetitive pattern] to cooperate with connectors on cooperating modules; and

c. a resinous material cast about the conductors and supporting the [connection] connections and rigid terminals thereby[; and].

[d. connectors placed in exactly corresponding locations on a standard surface of the module being connectable to the terminals of the bus bar.]

27.(Amended) The bus backplane of claim 26 in which cooperating terminals on the module and on the bus plane include one terminal in each pair as a self-engaging connector so that the module and backplane [fit together] self-connect upon [being positioned] having their terminals and connectors aligned and pressed together.

28. (Amended) The power bus backplane of claim 27 in which the bus conductors are [strips] in columns having similar form array, terminal patterns and positions in side by side arrangement so that cooperating modules may be arranged in matrix array as well as columns.

29. (Amended) The power bus backplane of claim 28 in which means is provided to connect power to the bus connectors and to cross connect bus bars intended to carry the same kind of power and at the same potential.

30. (Amended) The power bus backplane of claim 27 in which the bus [bar] conductors are placed in [a] stacked array [and] with terminals for the bus conductor on the bottom [pass] passing through [the hole] holes in [the] each bus conductor [on the top] above the bottom with insulation [therebetween] between the bus conductors and around the terminals passing through holes in other conductors.

31. (Amended) The power bus backplane of claim 27 in which [in addition to [conductors to] terminals passing through holes in at least one bus conductor] at least two other conductors pass through holes in [at least two parallel] all stacked bus conductors in the backplane, and are insulated therefrom [in order to provide] and provided with rigid terminals on both sides of the [bus plane] backplane.

32. (Amended) The bus [plane] backplane of claim 31 in which the bus conductors which are stacked are repeated side by side so that there are columns of stacked bus conductors with regular columns of terminals for

receiving modules at regular intervals along [the] each column.

33. (Amended) The backplane of claim 32 in which the bus conductors are sheets [almost] essentially the [dimension] dimensions of the backplane stacked one on top of another, each with [terminals of at least one penetrating] a terminal extending through holes in the other conductor at regular intervals both in columns and rows.

All Cncl.

Add the following claims:

36. The power bus backplane of claim 30, in which there are two bus conductors and the terminals on the conductor on the bottom pass through holes in the conductor on the top.

A12

37. The power bus backplane of claim 30, in which the bus conductors placed in stacked array, include at least three such conductors with the terminals for the bus conductor on the bottom passing through holes in each of the two bus conductors above it, and the bus conductor at the next layer having terminals which pass through holes in the top bus conductor.

38. The power bus backplane of claim 30, in which, in addition to power bus conductors there is a control bus conductor having a terminal on the control bus conductor which passes through holes in any of the power conductors placed above it and terminals on any power conductors below the control conductor bus pass through holes in it.

39. The power bus backplane of claim 29, in which cross connected bus bars are at the same level in the backplane

and cross connected bars of a related group of bars at different potential are at different parallel levels of the backplane.

40. The power bus backplane of claim 29, in which bus bars are in the same plane with bus bars of different potential and cross connectors are directed around bus bars of different potential using other planes.

41. A power node comprising in combination with the power bus backplane of claim 26, a plurality of cooperating functional modules which have circuitry within the module and connect to terminals on load conductors extending through the backplane to terminals on the opposite side of the backplane from the module supporting side, which in turn provide connection to a power source, another node or a load.

42. The power bus backplane and module combination of claim 41, in which the modules provide flat surfaces similar to surfaces on adjacent modules and by connection to terminals on the backplane said flat surfaces are positioned in contact with one another and lend support to one another by their mutual contact.

43. The power bus backplane and module combination of claim 41, in which the at least two bus conductors are co-extensive for practical purposes with the backplane, each array of terminals is the same and repeated at positions in a matrix that permit use of minimum dimension modules which contact and help support adjacent modules and provide the same power to all of the modules.

44. The power bus backplane and module combination of claim 41, in which the modules are all rectangular solids with the connectors in a standard array along a narrow edge corresponding to terminal arrays on the backplane.

45. The power bus backplane and module combination of claim 44, in which the pattern of terminals on the modules is linear and extends in the direction of the length of the edge along which the pattern is arranged.

46. A module for use in connection with a power bus backplane node comprising circuitry and at least one component for modifying power passing to the module and connected to terminals affixed to and capable of supporting the module to some extent through their electrical and mechanical connection to terminals on the backplane.

A12 Cont.

47. The module of claim 46, in which at least two terminals are devoted to power input and two terminals to power output as to a load outside of the module backplane node.

48. The power bus backplane of claim 31, in which the insulation and support of the at least two other conductors passing through the backplane without conductive connection to the conductors in the backplane are rigidly supported and provided with terminals on the module side of the backplane which are of the same type employed for the terminals for the respective busses and terminals the other side of the backplane are also rigidly supported so as to be suitable for connection to conductors to a load.

49. The power bus backplane of claim 30, in which further bus conductor in the stack is a control bus capable of